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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,221	02/12/2004	Yuji Okawa	SUT-0233	4177
23353	7590	08/05/2005	EXAMINER	
RADER FISHMAN & GRAUER PLLC			YANTORNO, JENNIFER M	
LION BUILDING			ART UNIT	
1233 20TH STREET N.W., SUITE 501			PAPER NUMBER	
WASHINGTON, DC 20036			2881	

DATE MAILED: 08/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/776,221

Applicant(s)

OKAWA, YUJI

Examiner

Jennifer Yantorno

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/12/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Priority*

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Rejections - 35 USC § 112***

Claim 7 contains the trademark/trade name Tempax. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe borosilicate glass and, accordingly, the identification/description is indefinite.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Hodges (US 5,590,787).

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Regarding claim 1, Hodges teaches an ultraviolet irradiation method for emitting ultraviolet light toward a work piece (die 14) and a frame (bed 10) holding said work piece through an ultraviolet sensitive adhesive tape (15) applied to a back surface (undersurface 17) of the work piece, said method comprising a step of emitting ultraviolet light to said work piece (Column 3, lines 24-27) while supporting an undersurface of said work piece (Column 3, lines 20-21) held by said frame (bed 10) in time of ultraviolet irradiation of said work piece (Column 3, lines 16-27).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-6, 9, 12, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hodges (US 5,590,787), in view of Farnworth et al. (US 6,202,292 B1).

Regarding claim 2, the aforementioned prior art teaches all of the claim limitations with the exception of the frame being ring-shaped having an inside diameter of at least 300 mm. Farnworth et al. explicitly teach a diced wafer disposed upon a carrier tape supported by a circular frame ring (Column 5, lines 16-21). Neither source explicitly teach an inside frame diameter of at least 300 mm, but it is notoriously known in the art that a large-size wafer ranges in diameter from 150 mm to 430 mm, therefore 300 mm would accommodate more than half of large-sized wafers. It would have been

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obvious to one of ordinary skill in the art at the time of the invention to make the frame round to echo the shape of a round semiconductor wafer and to minimize the frame material waste of making a rectangular frame.

Regarding claim 3, Hodges teaches that the work piece is a die, part of a semiconductor wafer (Column 3, line 20).

Regarding claim 4, the aforementioned prior art teaches an ultraviolet irradiating apparatus for emitting ultraviolet light toward a work piece and a ring-shaped frame holding said work piece through an ultraviolet sensitive adhesive tape applied to a back surface of the work piece. Hodges teach an apparatus comprising a regulating means (plate 11) for limiting a downward displacement of said work piece held by said frame in time of ultraviolet irradiation of said work piece (Column 3, lines 16-22).

Regarding claim 5, Hodges teaches a distance from an undersurface of said work piece to said regulating means is set to at most 3 mm, specifically, Hodges teaches the undersurface of the work piece is in contact with the regulating means (Column 3, lines 20-22).

Regarding claim 6, Hodges teaches that the regulating means is formed of a glass plate (Column 3, lines 16-19).

Regarding claim 9, Hodges teaches that the regulating means is formed of a plastic penetrable by ultraviolet radiation (Column 3, lines 16-19).

Regarding claims 12 and 13, Farnworth et al. teach a regulating means formed of metal wires arranged in a grid (Figure 5a and Column 8, lines 6-11). Farnworth et al. do not explicitly teach the grid dimensions of claim 13, but it would have obvious to fashion

the grid in a size to prevent the work piece from falling through the grid upon ultraviolet radiation application.

Regarding claim 14, Hodges teaches that the work piece is a die, part of a semiconductor wafer (Column 3, line 20).

Claims 7, 8, and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hodges (US 5,590,787), in view of Farnworth et al. (US 6,202,292 B1), further in view of Summersgill et al. (US 6,348,999 B1).

Regarding claim 7, the above-mentioned prior art teaches all of the claim limitations except for the regulating glass plate being soda glass or tempax. Hodges teaches a regulating means made of a polycarbonate, but Summersgill et al. explicitly teach the use of borosilicate glass lenses in semiconductor irradiation (Column 15, lines 5-9). It would have been obvious to one of ordinary skill in the art to use borosilicate glass as a regulating means for its strength, durability, and reliability

Regarding claim 8, Summersgill et al. teach a borosilicate glass lens that is 1.1 mm thick (Column 15, line 5), which is at least 100 micrometers thick.

Regarding claim 10, Summersgill et al. teach attaching a polyester film to a glass substrate with adhesive tape (Column 11, lines 16-21, lines 61-63).

Regarding claim 11, Summersgill et al. do not explicitly teach a thickness of 150 micrometers for the polyester film, but it would have been obvious to fabricate the film to a required thickness that it does not melt under the ultraviolet light or fold under the weight of the work piece.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hodges (US 5,590,787), in view of Farnworth et al. (US 6,202,292 B1), further in view of Okamoto et al. (US 6,153,357).

Regarding claim 14, the above-mentioned prior art teaches all of the claim limitations with the exception of using a cold filter as a regulating means. Okamoto et al. teach using a cold mirror in semiconductor fabrication and ultraviolet exposure (Column 24, lines 23-24, and Figure 4, item 405). It would have been obvious to one skilled in the art at the time of the invention to use a cold filter as a regulating means to more effectively reflect the ultraviolet light without the addition of excess heat.


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Yantorno whose telephone number is (571) 272-5918. The examiner can normally be reached on Monday-Friday, 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached on (571) 272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JY

  
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